THE $2.00

# JACG NEWSLETTER

THE JERSEY ATARI COMPUTER GROUP

VOLUME 8 NUMBER 1 BBS : 201-298-0161 MARCH 1988

## FROM THE EDITOR'S DESK

In this issue is undoubtedly the longest single, non-serialized article ever written for the JACG NEWSLETTER. Paul Machiaverna has provided us with a mini-ATARI DOS 2.5 manual...it should save hours of flipping through the manual provided by ATARI...as Paul has provided essence without clutter...many thanks, Paul!

In response to George Schultz and his letter published in the last issue, and in response to others...I have never touted the ATARI Corporation as a customer or consumer oriented organization. Their support and backing (in my opinion) are on a scale of between zero and minus ten. I do, however, feel that the ATARI computers have a lot to offer, past and present, to the home computer market...yes, and especially with the ST models, something to offer the school and small-business user. In Europe especially, the ST has "taken-on" very well. Third vendor support has suffered, especially regarding ATARI 8-bit machines, I think more as a result of lack of ATARI corporate support than the much touted and alledged ATARI owner predilection to piracy; despite this, a plethora of software IS available for the ST...and NOT JUST GAMES!

The immediate future for JACG? Upcoming is the Ken Gordon Computer Show, the Programming Contest, the Hackers Contest, and the ATARI Safari...and, of course, our continuing NEWSLETTER, monthly meetings, and our BBS...and, spring is just around the corner!

D. B. Noyes

## IN THIS ISSUE ...



## CALENDAR OF EVENTS

| | |
|---|---|
| April 1, 1988 | Exec Board Meeting |
| April 9, 1988 | JACG Monthly Meeting |
| April 10, 1988 | Ken Gordon Computer Show |
| May 14, 1988 | JACG Monthly Meeting |

EFFECTIVE 12/23/87

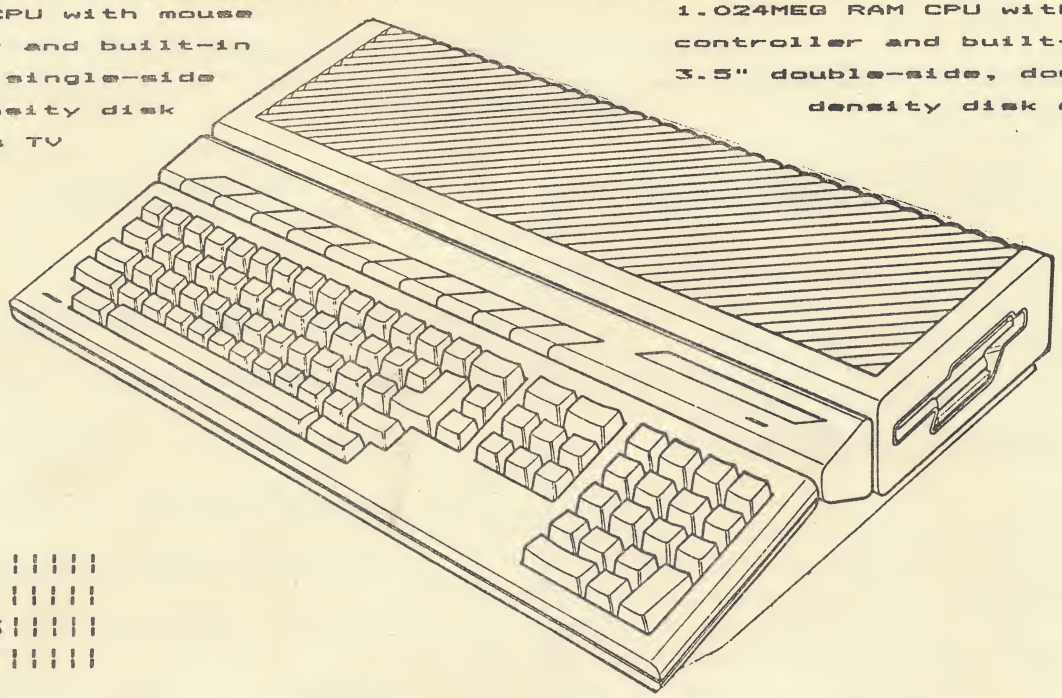
# ATARI® ST Computer System

68000 MICROPROCESSOR - 8 MHZ CLOCK - RS232 SERIAL PORT - PARALLEL PORT
HARD DISK DRIVE PORT - CARTRIDGE PORT - SECOND FLOPPY DRIVE PORT - 192K ROM
MIDI INTERFACE - TOS OPERATING SYSTEM - GEM DESKTOP - 512 COLORS
MONOCHROME 640 X 400 RESOLUTION - COLOR 640 X 200 RESOLUTION

90-day Warranty - Over-the-Counter Exchange

**520STFM.....$ 549.95**
512K RAM CPU with mouse controller and built-in 360K-3.5" single-side double-density disk drive plus TV output

**1040STF.....$ 709.95**
1.024MEG RAM CPU with mouse controller and built-in 720K 3.5" double-side, double-density disk drive



## MONO SYSTEMS

**520STFM CPU with .....$ 699.95**
ATARI SM124 Hi-Res B&W Monitor

**1040STF CPU with.....$ 859.95**
ATARI SM124 Hi-Res B&W Monitor

## COLOR SYSTEMS

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**1040STF CPU with.....$ 949.95**
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# PRESIDENTS REPORT
by Doug Van Houk

CONGRATULATIONS PROGRAMMERS!

JACG is proud to announce the contest entrants in the programming contest!

| | |
|---|---|
| Bruce Kolber | Bob Knoblauch |
| John Dean | Jim Morlock |
| David Dvorin | Paul Machieverna |
| Eric Jackovis | |

These seven programmers submitted a total of nine programs. The programs have been used for our disk of the month and will be demonstrated at the April meeting.

Many of our members were interested in how we decided to demonstrate ATARI software at the Ken Gordon Computer show on April 10th. We decided to let the volunteers decide what to do with their own four hour tours of duty. They will be given the suggestions of the membership and allowed to use their own judgement. Joe Hickswa drafted a letter asking Atari for support for the show, I am looking forward to their response.

A special note of thanks for Secretary Bob Mulhearn who has done most of the work to organize the show, and will be the first JACG member on the scene. Bob will be setting up our booth. Sam Cory will be setting up with him. Linda Peckham will be there early, and has agreed to bring her ST.

We are still running the "Hacker's Contest", and have included a much more descriptive clue in this month's Newsletter. Gary informs me that the bulletin board has been getting quite a few callers. Whoever correctly identifies the name and password from the clues we provide wins $25.00. There is only one winner, and the winner must be a JACG member.

Those of you who have asked for a different meeting format once in a while can volunteer for the ATARI SAFARI! At the ATARI SAFARI the group is divided into between four and six groups. At each station, members can see a different demonstration which was prepared by our members. The event is scheduled for June 11th. There is only one problem... SO FAR, THERE HASN'T BEEN A SINGLE VOLUNTEER!

As part of our effort to maintain our current membership levels, Bob Mulhearn has begun to send letters to former members who have not renewed their membership. The letters invite them back to JACG. Many new ideas are coming from our members!

Last but not least, I would like to express thanks to Ray Golowach for putting an end to our 16-Bit video problems. Ray repaired the cable which connects the ST to the large screen TV we use at the meetings.

# NOISE FROM NOYES
by Dave Noyes

ANALOG, ANALOG, wherefore art thou, O ANALOG ? Despite messages left on answering machines, interviews on the COMPUSERVE ATARI FORUM, and information gleaned from various and sundry sources...ANALOG remains among the missing. Rumor (and I stress, RUMOR0 has it that attorneys for ANALOG have been contacting some to whom ANALOG owes money. I personnally have not been contacted...but after all, ANALOG only owes me five issues. As far as I am concerned, ANALOGs' silence is a good indicator of both how they really feel about their (up to now) loyal readership (I hope that is a word!), and just how reliable they may be in the future (if ANALOG has any future). I shall wait no longer...I will subscribe to PAGE 6 and ATARI USER, two U.K. magazines which appear to be not only very good...but healthy!!!

So much for sour grapes. In the bargain basket...I was down in Atlanta last week...picked-up a few goodies: Battalion Commander by SSI for $.99, Trailblazer by Mindscape for $8.49, and The Pawn and Guild of Theives by Rainbird for $9.99 each. All new!

Another "goodie" that I have recently added to my library is Mini Office II, a Word Processor, Spreadsheet, Database, Graphics, Label Printer, and Communications program...all on two sides of an easily backed-up disk. The price is about 20 pounds (no ounces!!!) which is approximately $35.00. It is worth it...and worthy of a review seperate from this column...look for it in a following issue of this august (I don't mean the August issue!) publication.

Have you investigated our (the JACG) Disk Library lately? 8 and 16-bit titles are constantly being added. It is a valuable source of myriads of public domain software. Games, education, application, graphics, demos - theycare all there, ant at an obscenely LOW PRICE. For further information please approach the hard-working librarians in the lobby either preceding or following the monthly meeting. If unable to attend, please contact the Mail-Order Librarian, Bret Callegari, at the address indicated on the back cover of the NEWSLETTER.

## LETTER to the EDITOR

J. Hicswa - JACG

T.V. News-7:00 p.m., Channel 2, February 19th, had an item about American industry spending over 200 BILLION dollars yearly to teach employees basic arithmetic, reading and writing. What an open field for inexpensive ATARI computers and public-domain educational software! Also a challange to JACG programmers. This could be another JACG and ATARI contribution to America's progress.

# WAKE UP!
# Atari Corp.

Paul Machiaverna - JACG

In the January 1988 issue of the JACG newsletter you can see an article I wrote entitled 'Irony in the Computer Market' and basically stated that Atari computers have always been great machines which deserve much more credit than they have received. George Shultz, a member of the JACG, wrote an article for the February 1988 issue of the newsletter to combat my remarks made in my article. Mr. Shultz complains that he paid $2,000 for his original Atari 800 system back in 1982. After some additional hardware, he paid more than $2,600. The point of my article is that you should take a look back at the price of the old Apple II+ system, which then was the competition for the 800 system. You would have paid around $4,000 for the same comparable Apple system. Note also that the Apple II+ computer did not support lowercase letters and, like Atari, did not include any standard ports for a modem or printer. George obviously read through my article very fast and rushed to write his reply. I specifically stated that the ST computers are the ones which include the standard RS-232 and Parallel ports, and not the eight bit computers. I get the feeling that he thinks Atari computers are only useful for playing games, but not for serious work, according to his closing sentence of his article. I agree that the eight bit Atari computers lack many features needed for today's business computer needs and the electronic spreadsheets written for them leave a lot to be desired. But, let's not try to make people think that the ST is a bomb. VIP Professional, the Lotus look alike for the ST, is much easier to use than 123 and has much better graphing capabilities. The ST is far more powerful than the typical PC/XT computer. The grade of ST software has increased continuously and much of it is business applications. Please, George, learn more about the ST before you call it another 'Great Graphics' machine.

Now why did I call this article 'Wake up, Atari Corp.? Because George also brings out many facts about Atari in his article which really have a detrimental effect on the Atari computer users. Atari needs to do something about their policies quick. They continue to never release any products near the release dates or at all. I personally have been waiting for the Atari 205 hard drive to be released for quite some time now. But, as of the time I am writing this article, I have ordered a hard drive from a third party vendor. The reason why I ordered a non-Atari drive was for three reasons; 1) the existing 204 drive has been raised another $50, from $550 to $600, 2) the 205 drive is going to cost more than the 204 and nobody knows when they will be in stock, 3) for only $175 more you can buy a 62 megabyte hard drive which is twice as fast as the Atari model. Note that the Atari drives are 20 megabytes, three times less than the third party hard drive. Atari used to have 'Power without the Price.' That is not the case lately.

Atari is not very helpful to the software developers. They charge for information which should be submitted to any bonafide software developer at no cost. I feel that Atari builds great computers. But without quality software they, like any other computer, are nothing more than expensive dust collectors. The ST computers have so much potential and I find it very frustrating that more is not published about the underlying hardware. When Atari announced that they where going after the desktop publishing market with their Mega ST computers and laser printer over a year ago, they had the chance to become the leader in the market. However, as of this writing the Mega ST computers and the laser printers are nowhere to be found on the east coast and the cost of these machines are a lot more than the originally stated prices. Atari does no advertising of the Mega ST outside of computer magazines. Apple is always advertising the Macintosh for desktop publishing on television and in newspaper ads where the mass people gain their information. It is obvious that Atari missed the boat for desktop publishing. I doubt you are going to convince a Mac user to dump his machine after so much time has passed.

You are probably thinking about the 'Irony of Paul Machiaverna' by now. In my January article I gave Atari five stars. This month I'm criticizing them into the ground. Let me say that as an Atari user I realize the pros and cons of the machines and I feel that both sides of the coin need to be made public. By recognizing the problems with our machines we can find solutions to correct them. George Shultz is right when he states that Atari is laughing to the bank when they see the 'rah rah Atari' articles. What we should see more of is constructive criticism of the machines and company policies to make Atari understand that we are not a group of individuals who have a blind faith in their company. I had every intention of buying an Atari hard drive. But with the increase in price for the same piece of equipment, which was overpriced in the first place, they can keep it. What do they think they are getting away with? George is also correct in his stating that Atari has done nothing to get away from the game machine image. Sure, the Mega ST is a serious business application machine and is suited for vertical marketing. But Atari advertises their XE game system on national television, which only pushes that game image more and more into our faces.

Despite all the fire being thrown at Atari in this article, I still like using their machines over any other microcomputer on the market. I've used IBM, Apple and Commodore machines time and time again, but I still stick with the Atari for the best overall performer. I just would like to see Atari become a more responsible computer company. They should suport those who support their

machines. Incidentally, George, this article was written on my Atari Mega ST4 computer with the free of cost ST Writer wordprocessor. I didn't have to convert the file at all to upload it the JACG BBS Newsletter submissions. Any I don't have to exercise any Rube Goldberg to perform any business tasks.

## CONFESSIONS OF A PICTURE JUNKI

Neil Van Oost Jr. JACG

It all started when I bought my first public domain picture disk, this was somewhere around my third month of computer ownership. I practically wore that disk out showing it to all my friends. I was hooked, from that day on I've collected pictures for my 800 and 130XE. Now I've never professed to be any kind of artist, although I have fooled around with watercolors now and again, so when I saw Some pictures done with Micropainter, I just had to rush right out and buy that program.

At this time I had not discovered compressed picture format, so my creations used to fill disks up pretty fast. I had also not discovered the art of punching a disk and using the back side, so at eleven 62 sector pictures per disk and disks at a buck-sixty each, my pocketbook rapidly became disk deflated.

Since then there have been many advances and different picture formats for the 8 bit Atari. With the advent of Computer Eyes, digitized pictures became a reality. At almost the same time, someone discovered how great you could make these digitized grey shaded graphics nine pictures look if you enhanced them with Rambrant.

About this time I began to realize that there was more to just showing you pictures on the screen, and my dreams of owning a graphics printer became fact. That first printer put a rather large dint in my computer expenditures for that year. It was a Centronics 739, which I purchased for $500, and of course an 850 interface for another $200. There was only one printer dump program available for the 739, and that was from APX (Atari Program Exchange). For the next couple of years I happily printed my way through many reams of paper.

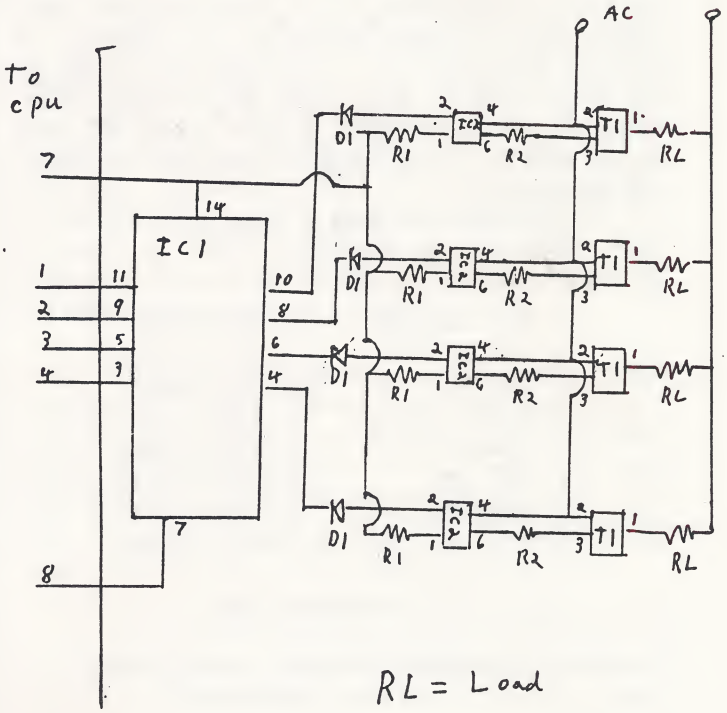
My next two additions to enhance my picture collecting came almost together. I purchased a used Atari Touch Tablet and an Atari 1020 printer plotter. Now I was able to print pictures in color. I do admit they were only 4 by 6 inches, but they were in color. The touch tablet provided many happy hours and still does.

Just when I figured I had everything I wanted, and the picture files slowed to a mere trickle, along comes Printshop. When I first saw Printshop at a computer show, I just had to have it. I plunked down the thirty some odd bucks, and rushed home to try it out. unfortunately I failed to read the fine print. You know, the part that tells me that it WILL NOT work with my printer. There was a plus tho, I had bought my father an SG-10 for his birthday, so I just made him a present of it.

Eventually I did get a NX-10 and now can print 'anything' I want - well almost. My collection of picture files now includes over 1000 Printshop files, three or four hundred micro-illustrator/micropaint format files, a couple of hundred RLE files, and several disks of odd format files. Most of these are in our JACG library, and eventually will make their way to a monthly disk.

If you would like to make custom greeting cards, mini-billboards, custom stationary and other neat picture stuff, both in color and black and white keep watching these pages, and at a future issue I will cover some of the ways to to use all those picture files and the programs to enhance and convert from one to another format.

SCHEMATIC FOR AC CONTROLLER IN FEB.'88 JACG NEWSLETTER. THE JACG AND R. KNOBLAUCH ASSUME NO RESPONSIBILITY NOR LIABILITY RELATED TO THE AC CONTROLLER.



# ATARI DOS

## Effective Use of Atari DOS

Paul Machiaverna - JACG

It is easy for veteran Atari users to take for granted that everyone knows all about the use of DOS on the 8-bit computers. However, there are many new users in the club who don't know all the features of DOS, and there are probably those who just simply never wanted to read the DOS manual. Please keep in mind that only Atari DOS 2.5 will be discussed here. But, many features are the same in most others available for the 8-bit computers.

DOS is used to perform a wealth of operations for us. Whenever you are working with BASIC, a wordprocessor, or any other application, and you save a file to disk, DOS is responsible for finding a place for your file on the disk and saving it. When you load the file back into memory, DOS has to find it on the disk then proceed with loading it into your computer. But, what about if you want to see a list of all the files you have on a disk, you want to delete a file you don't need anymore, you want to make a copy of a file or diskette? There are two ways of doing this; 1) Some applications will allow you to perform many DOS functions directly from their program, 2) Use the Atari DOS 2.5 Menu. We will discuss the second method.

The DOS menu is a very important feature of Atari DOS. Instead of your having to memorize a list of commands to type in to make DOS perform it's functions, you simply type the letter of the desired option, press <Return> and maybe some parameters on the keyboard. To make sure that we are both discussing the same version of DOS, be sure that your menu matches the one listed below. To get this menu either boot up your master DOS disk without BASIC or any cartridges, or if you are in BASIC, type DOS<Return>.

```
DISK OPERATING SYSTEM II  VERSION 2.5
COPYRIGHT 1984 ATARI CORP.

A. DISK DIRECTORY        I. FORMAT DISK
B. RUN CARTRIDGE         J. DUPLICATE DISK
C. COPY FILE             K. BINARY SAVE
D. DELETE FILE(S)        L. BINARY LOAD
E. RENAME FILE           M. RUN AT ADDRESS
F. LOCK FILE             N. CREATE MEM.SAV
G. UNLOCK FILE           O. DUPLICATE FILE
H. WRITE DOS FILES       P. FORMAT SINGLE

SELECT ITEM OR <RETURN> FOR MENU
```

Now let's discuss each of these menu options in detail to reveal all the available ways of using them.

A. DISK DIRECTORY - This option is used to display a list of files on a disk. The 'directory listing' can appear on the screen, a printer, or you can save it to a disk file. By sending the listing to a printer you have a handy printed copy of the files for reference when you are looking for that file that you never are able to find when you need it. And, by sending the listing to a disk file, you can send directory listing to someone via modem by simply uploading the listing file. To use the DISK DIRECTORY option, press the 'A' key. Then DOS will prompt you for two parameters. The first is the SEARCH SPEC. If you want a list of all files that end with the file extender 'BAS', type *.BAS<Return> and DOS will search for and list all files on the disk that match this specification. If you want to see a listing of all files whose filenames begin with the letter 'J', type J*.*<Return>. But, what is the asterisk ('*') doing there? That is a wild card. A question mark ('?') is another wild card. Wild cards are very useful. Just like when you play a card game and you declare wild cards to be used as anything, DOS allows the use of wild cards too. The * is used to represent any number of letter places in the filename specification. The ? is used to represent only one letter place. Note that if you simply hit <Return> at the prompt, DOS will assume that you want a directory of all files in disk drive 1 listed on the screen. The second parameter of the DISK DIRECTORY option is the LIST FILE specification. This is where you want the directory listing to appear. To get a list of all files ending with 'BAS' on your printer, type *.BAS,P:. The comma tells DOS to accept and interpret the following characters to be where the listing shall appear. P: tells DOS to send the listing to the printer. Some other valid parameters are S:, E:, and D:FILENAME.EXT. S: & E: are for the screen display and are the default parameter. The last one is for listing the directory to a disk file. Use any file name you wish, but may I suggest that you use one which is descriptive to the disk contents for future reference.

B. RUN CARTRIDGE - This option will return to to any cartridge you have installed in your computer such as BASIC, MAC/65, etc. If you have an XL or XE machine remember that BASIC is installed in your machine. To boot up with BASIC and DOS, place a disk with Atari DOS on it and turn on your machine. But, if you want to disable BASIC, press the OPTION key down while you boot up the machine. In this case when you choose RUN CARTRIDGE, DOS will report NO CARTRIDGE and nothing else happens. RUN CARTRIDGE also will automatically load in the MEM.SAV file on disk before returning control over to the cartridge installed. See the notes on the menu option N. CREATE MEM.SAV for more information concerning the MEM.SAV file.

C. COPY FILE - This option is used for file copying between two or more disk drives. Copying files is a very important feature of any computer system. If you need a copy of a file as a backup, to give to a friend, or whatever, this option will perform the function. There are two parameters to the COPY FILE function. When you type C<Return> DOS will prompt you with COPY--FROM, TO?. The FROM parameter is the file you want a copy of, also

called the SOURCE file, and the TO parameter is where you want the file to be copied to, also called the destination. The FROM parameter is straight forward, you type where the source file is and the name of the file you want copied. The TO parameter has a few options available to you. You specify where the destination is located and what filename you want used. For example, if you want to copy a file called MYFILE.BAS on a disk in drive 1 to a disk in drive 2, you would type: D1:MYFILE.BAS,D2:<Return>. Notice what I gave for the TO specification? I simply wrote D2:. DOS will use the name of the source file as the name for the destination. But, there are other features to note here. Atari DOS allows you to not type the D before the drive number. When you type 1: or 2:, DOS knows that you are talking about disk drives. If you don't type any device specification such as D1: or 2: before a filename, DOS will assume that that file exists or is to be copied to drive 1. You can also change the name of the destination file to be different from the source file name. This can be done by typing MYFILE.BAS,2:YOURFILE.BAS. This will read the source file as MYFILE.BAS on drive 1 and copy it to drive 2 under the name YOURFILE.BAS. The wild cards discussed in the DISK DIRECTORY option notes can be applied here too. If you want to copy every file from one disk to another, I suggest that you use the J. DUPLICATE DISK option instead because it is much faster. It is possible to use DOS to copy files between different devices other than just disks. Let's say you have a file called PROGRAM.DOC in drive 1 which is documentation file and you want to read it. You have a two options here. Read it on the screen or send it to a printer for a hardcopy. To read it on the screen you type PROGRAM.DOC,E: or replace E: with S:. E: is the editor built into your Atari. S: is the screen display. However, I suggest that you only use the E: option here because the text will appear better on the screen. Whenever you send something to the editor it will write the information on the screen, but unlike the S: device, it will interpret special control characters which may be contained in the file properly. If you want to make a hardcopy of the file type PROGRAM.DOC,P:. It is also possible to use DOS as a simple text processor. Type E:,P: at the FROM, TO prompt and DOS will take all characters typed on the keyboard and send them to the printer. To send the characters to the printer you type everything you want printed on the keyboard and it will appear on the screen. Then you must type <Control>3 (press and hold the Control key and type the number 3) to indicate that you are done typing. Incidentally, <Control>3 is called the End Of File (EOF) marker and simply tells the editor that you have completed typing you message. But wait! There is still more to know about the COPY FILE menu option. If you want to add the contents of one file to the end of another file, DOS allows you to do this easily by typing /A after the destination file specification. /A is also called the append file option. This is useful when you want to add the contents of the destination file to the end of the source file. It it important to realize that you should not use this option for merging files SAVEd under BASIC or other programs which tokenize there SAVEd files. Just think of 'tokenizing' as a method of compressing the size of a file. However, if you LIST two files to disk, you can use the /A option.

D. DELETE FILE(S) - This option is used to delete a single file or multiple files from a disk. Deleting file(s) is for making room on a disk or when you no longer will need to use a file and you wish to get rid of it. To use this option type D<Return> and DOS will prompt you with DELETE FILE SPEC. You then type in the file(s) you want deleted. For example, MYFILE.BAS<Return> will delete MYFILE.BAS from drive 1. But, DOS will first ask you if you really want to delete the file(s) as a safety feature because once you delete a file it is gone. When DOS prompts TYPE "Y" TO DELETE... MYFILE.BAS? you can continue with the deletion by typing Y<Return> or press N<Return> to abort. However, let's say that you are absolutely sure that you want the specified file(s) deleted. Then you may not want to be prompted for the deletion. You can suppress the prompt by typing /N after the file spec and DOS will delete every file which matches the specification without asking you. Use this option with great caution. Especially when you are using wild cards in your file spec because you can easily delete a whole list of files that you may or may not have intended to wipe out. Wild cards can be used in this option, however instead of using *.*/N to delete all the files on a disk, it is faster to use the I. FORMAT DISK or P. FORMAT SINGLE menu option.

E. RENAME FILE - This option is used to give a new name to a file. Type E<Return> and then DOS will prompt RENAME - GIVE OLD NAME, NEW. In the OLD NAME you give the drive specification and the filename you want changed. In the NEW you only give the new filename and do not give a drive spec. You can also use wild cards in this option. For example, you have files on a disk which end in DOC and you want to change it to end in TXT. Then type *.DOC,*.TXT and this will change all the filenames meeting the specification on the disk in drive 1.

F. LOCK FILE - This option is a safety feature which you can enable on each file on a disk. When you lock a file you are protecting in from being over written, deleted, and filename changes. You can use wild cards here for quick and easy locking of a list of files an a disk. Keep in mind, however, that locking files will not protect them from being erased from formatting a disk.

G. UNLOCK FILE - This option is just the reverse of the LOCK FILE option. Use this to UNLOCK files which you previously LOCKed with DOS.

H. WRITE DOS FILES - This option will write DOS to any formatted disk in any available drive. Remember that DOS is what gives us the ability to use disk drives in our

computer systems. DOS must be present the disk and in drive 1 when you boot up your system in order for DOS to load into your computer. If not, you will get a BOOT ERROR message on the screen. DOS is actually two files, DOS.SYS and DUP.SYS. DOS.SYS is the DOS itself and DUP.SYS is the menu driven screen we see when you are in DOS. Both files are written when you WRITE DOS FILES. Since DOS takes up space on a disk you may wish not to have it on every disk in your library. The DOS files are only needed during boot up and when you goto DOS from a cartridge.

I. FORMAT DISK - This option writes information to a disk which allows it to be written to and read from. It also erases any files which may have been on the disk. New disks taken right from a fresh box of diskettes need to be formatted before your Atari disk drive can write any information to it. If you are using an Atari 1050 drive this option will format a disk to contain approximately 127K bytes of information, also called Enhanced Density. On the Atari 810 drive, you will get approximately 88K bytes of information, also called Single Density. If you want to force a 1050 drive to format a disk in Single Density, to make it compatible with the 810 drive, use the P. FORMAT SINGLE. FORMAT DISK will automatically adjust itself to Single Density if it finds an 810 drive in the drive specification. Overall, use the format options with great care. You will completely erase all information on a disk when you format it. Be sure you have the disk you absolutely want to format in the drive before using this option. As a safety feature DOS will ask you if it is okay to format the disk before actually starting the function. The only way to prevent a disk from being reformatted is to place a a write protect over the notch on the side of the disk.

J. DUPLICATE DISK - This option makes an exact image copy of an entire disk. You will be prompted with DUP DISK-SOURCE,DEST DRIVES?. If you only have one drive you must type 1,1. If you have two or more drives you can make any drive the source or destination. With one drive you will have to perform some 'disk swapping'. This is when DOS reads in as much of a source disk as the computer's memory can handle and prompts you to place in the destination disk. After the destination disk is partially written to, you will have to remove the destination disk and place the source disk in the drive again to read in to rest of the information, etc. This can become very tedious work if you make frequent disk duplications. Two drives make this task much faster and easier by eliminating disks swapping. Atari DOS 2.5 will automatically format the destination disk to match the density of your source disk. Remember that DUPLICATE DISK will completely erase the previous information on the destination disk. The 1050 disk drive can duplicate either an Enhanced or Single Density disk. The 810 can only duplicate a Single Density disk. Which means that if you have one 1050 and one 810 in your system you can use either drive as the source and destination for Single Density disks, but you can only use the 1050 drive for the source and destination for Enhanced Density disks.

K. BINARY SAVE - This option should only be used by experienced users of both DOS and the Atari computers. Therefore I only will give a brief description of this option. BINARY SAVE takes binary information from the memory of the computer and saves it to a disk file. You give DOS the range of the memory locations and a filename you want saved to disk. For more information on this advanced DOS function, consult your DOS manual.

L. BINARY LOAD - This option is usually not used by beginners, but it is not nearly as complicated as the BINARY SAVE option. This option loads in a binary file from disk into the memory of your computer. You probably have heard of Machine Language (ML) programs. This is how you load them in from DOS. DOS will automatically place the file into the proper memory locations and it may even automatically run the program for you. You will usually see that binary files end with the file extender EXE, EXC, OBJ or BIN. EX? and OBJ usually indicate that they are ML programs which will run after they are loaded into memory. An advanced feature to BINARY LOAD is to suppress the automatic running of the ML program by typing a /N after the filename. This will load the file into memory and not run the program.

M. RUN AT ADDRESS - This option is for advanced users. It tells DOS to run a ML program which begins at a memory address. The address given must be in hexadecimal number format. This is used when you load a binary file which does not automatically run. Here is an example you can try, but be sure that you do not have anything of importance in the memory of the computer! Type M<Return>. DOS will prompt you with RUN FROM WHAT ADDRESS?. Then type E477<Return> and this will coldstart your computer. This is functionally the same as turning the power off to your computer and turning it back on. Please use this with caution. I do not want you to wipe out a program you have in memory.

N. CREATE MEM.SAV - This option creates a file called MEM.SAV on the disk in drive 1. MEM.SAV serves an important function in that it saves an area of memory which is used by both cartridge and DOS. For example, if you are working in BASIC and you type DOS without having a MEM.SAV on the disk your program will be completely erased from memory because DOS uses the same area of memory where your program is located. Having a MEM.SAV will allow you to goto DOS and return to BASIC without losing your program. However, this feature has two drawbacks. It takes up space on you disk and it takes considerably longer to go from BASIC to DOS to BASIC because DOS first has to write the information to the MEM.SAV before loading the menu and then it has to read in the information contained in MEM.SAV before returning to BASIC. A quicker solution to the problem is to not have MEM.SAV on disk and

SAVE the BASIC program you are working on to disk before typing DOS. When you return to BASIC using the B option of the menu, LOAD the BASIC program back into memory. This procedure is also a safety measure because some DOS options will actually invalidate the MEM.SAV file from loading back into memory. Ultimately, it is up to you to experiment with using MEM.SAV and decide whether or not you want to use it.

O. DUPLICATE FILE - This option is basically the same as the COPY FILE(S) option. It is used to make a duplication of a file or files from one disk to another. However, use this option only on single disk drive systems because you are forced to have drive 1 as the source and destination. Therefore, you are forced to perform disk swapping. If you have a two drive system there is no reason to use this option with one exception: the COPY FILE(S) option refuses to copy any files that end with the SYS filename extender. DUPLICATE FILE will copy any files with the SYS extender except DOS.SYS. To copy DOS use the H. WRITE DOS FILES option.

P. FORMAT SINGLE - This option forces the Atari 1050 Disk Drive to format a disk in Single Density. You do not need to use this option to format a disk in the 810 drive, which can only be Single Density. The FORMAT DISK option will automatically adjust to the drive specified. For more information on formatting disks see the FORMAT DISK option notes above.

## Hints, Tips & Bugs of Atari dos

The <Break> key on your keyboard is an all purpose bail out key. By pressing it you will force DOS to discontinue the operation of a function whether it is before or during execution of the DOS option. If you press <Break> during a copy or format process neither function will be complete. i.e. a disk will not be properly formatted or a destination file will not be completely written.

An important practice you should make habit is that you use filename extenders which are meaningful to what type of file it is. For example, BAS for Atari BASIC, MSB for Atari Microsoft BASIC, BXE for OSS BASIC XE, M65 for MAC/65, ATW for Atariwriter, OBJ or EXE for Machine language files, TXT or DOC for text files, etc. Doing this you will instantly know for what the file is written.

Atari DOS 2.5 supports a RAM Disk which is very useful for eliminating the wait for DOS to load in from disk when you are in BASIC and most of the problems discussed in using a MEM.SAV file above. The file called RAMDISK.COM on the DOS 2.5 Master Diskette will automatically initialize a RAM Disk on the Atari 130XE to be used as drive 8. The DOS files and the MEM.SAV reside on this drive for fast access to them. You may even save a file to the RAM Disk, but do this with extreme caution. Since a RAM Disk is a part of the computer's memory it is vulnerable to power failures and coldstarts. I do not suggest using a RAM Disk for storing anything that you do not have a copy of on a physical disk.

In the DOS manual you will see a method of customizing your DOS to allow for faster writing to disk by shutting off the write with verify. From five years of experience I can tell you that I never have lost any data on an Atari disk because I did not have write with verify enabled. All my working copies of DOS have the verify shut off. But you have to do with what you feel comfortable.

The full screen editor on the Atari computers is very powerful and can be used to your advantage to make using DOS functions easier to perform. The editor is dynamic, which means that you can use the parameters which are present at the line on which you place the cursor using the arrow keys. For example, you make a typo in specifying a filename as a parameter and you press <Return>. DOS may even report an error like file not found. But, you can move the cursor back up to over the letter you typed before and hit <Return>. You will then see that DOS has prompted you for the parameters. You are then positioned over the parameters where you made your typo before. All you have to do is edit the line and hit <Return>. This saves a lot of retyping and is an important feature not found on many other computers.

Sad to say, there are two bugs which seem to pop up very often when you use Atari DOS. The first is when you give a filename to the COPY FILE(S) menu option. If you spell the name of the source file letter for letter and you do not give a full name destination specification, DOS will report an error 165 and insist that you typed the file name incorrectly. Two ways around this is to try and use a wild card in the source name or type out the entire destination filename. The second bug with which you will deal is that you will be in the middle of one of the copying options or a format and everything just simply stops. No messages are printed to the screen, the drive busy lights go out and that's it. To the best of my knowledge this is actually caused by the Operating System of the machine. Deep in the inner workings of the Atari OS there is a routine which is used to temporary stop output to a printer to allow the print head to cool during long printing sessions. Why this can affect disk access is something about which I have not yet heard a straight answer. To complicate matters this situation happens at random. You have the option to either wait for the delay to end (which can take upto a minute) or press the break key once to snap the OS out of it's daydreaming.

I want to stress that you should never place or remove a disk from a drive while the BUSY light is lit. If you do, you cannot be sure that your file has been

properly read or written. Also, never use transparent tape for write protecting disks. The drive uses an light beam to check for the absence or presence of the write protect notch. Transparent tape will act the same as if nothing is there. If you have any further questions please contact me on the JACG BBS. Have fun exploring the uses of Atari DOS. It can do a lot for you.

## CHAOS: MAKING A NEW SCIENCE

Review by Donald Forbes - JACG

Before you go on vacation, be sure to pack a copy of this new book by James Gleick, the young science writer of the New York Times.

It reads like a novel, is now a Science Book Club selection, and has been on the New York Times bestseller list for several weeks.

Before you see the book you may have had, as I had, the naive idea that chaos was another word for disorder and confusion. Among the technicians, however, it has now acquired a new and contradictory meaning: the study of order patterns in seemingly random phenomena.

The newspaper calls it "an account of a fast-developing new science that involves disorder, arrhythmia and the bizarre and random in nature."

The book, first of all, is about fractals. You will be impressed, at first sight, by the series of color plates that look like brilliant paisley patterns. These dozen plates show the fractal pattern of the Mandelbrot set and magnify it successively until the final plate gives you a million-to-one magnification of the first plate. Amazingly, the characteristic Mandelbrot blob keeps repeating itself over and over again, despite the enormous magnification.

What is the book about? Well, it depends on who you talk to.

Computer scientists will tell you that it is about the ability of modern computers to create computer intensive graphs and drawings of physical events that could not be plotted any other way. (Fractals, incidentally, are being used today to stress test parallel processors because serial processors become compute bound by the floating point calculations, and input-output bound by the graphics.)

Physicists will tell that the book is about the fastest-growing discipline of applied mathematics. They say, as Gleick puts it, that "twentieth century science will be remembered for just three things: relativity, quantum mechanics, and chaos."

In the words of Joseph Ford of Georgia Tech: "Relativity eliminated the Newtonian illusion of absolute space and time; quantum theory eliminated the Newtonian dream of a controllable measurement process; and chaos eliminates the Laplacian fantasy of deterministic probability."

Research mathematicians are involved, but they take a more laid-back stance: We knew about this years ago, and the physicists are just now catching on. Mathematicians point out that the topic is just the study of dynamical systems theory and nonlinear differential equations that started with the topological study of phase spaces of dynamical trajectories, first by the lone pioneer Henri Poincare (1854-1912), and then later by the Russian mathematician Aleksandr Mihailovic Ljapunov (1857-1918), a pupil of Pafnuti Lvovic Tschebyscheff (1821-1914).

"Chaos breaks across the lines that separate scientific disciplines," according to Gleick. "Because it is a science of the global nature of systems, it has brought together thinkers from fields that had been widely separated.

"Now that science is looking, chaos seems to be everywhere. A rising column of cigarette smoke breaks into wild swirls. A flag snaps back and forth in the wind. A dripping faucet goes from a steady pattern to a random one.

"Chaos appears in the behavior of the weather, the behavior of an airplane in flight, the behavior of cars clustering on an expressway, the behavior of oil flowing in underground pipes.

"No matter what the medium, the behavior obeys the same newly discovered laws. The realization has begun to change the way business executives make decisions about insurance, the way astronomers look at the solar system, and the way political theorists talk about the stresses leading to armed conflict."

The name "chaos" goes back to James A. Yorke (301 / 454-2639), a mathematical generalist, philosopher, and research professor at the Institute for Physical Science and Technology of the University of Maryland.

The current excitement began with weather forecaster Edward Lorenz at MIT who was trying to simulate long-range weather prediction on a computer with a set of differential equations.

"One day in the winter of 1961, wanting to examine one sequence at greater length, Lorenz took a shortcut," according to Gleick. "Instead of starting the whole run over, he started midway through...he typed in the numbers straight from the earlier printout. When he returned an hour later...this new run should have exactly duplicated the old...The program had not changed. Yet as he stared at the new printout, Lorenz saw his weather diverging so rapidly from the pattern of the last run that, within just a few months, all resemblance had disappeared.

"Suddenly he realized the truth. There had been no malfunction. The problem lay in the numbers he had typed. In the computer's memory, six decimal places were stored: .506127. Lorenz had entered .506 to save space, assuming that the difference -- one part in a

thousand -- was inconsequential...Yet in Lorenz's particular system of equations, small errors proved catastrophic."

It dawned on Lorenz that long-range weather forecasting would never work. He wrote up his equations and findings in a meteorological journal ("Deterministic Nonperiodic Flow," Journal of Atmospheric Sciences 20 (1963), pp. 448-64) in a paper that later became one of the most cited physics papers of recent times.

Applications of chaos can be found across all the physical sciences.

For example, Mandelbrot's fractals found "enthusiastic acceptance among applied scientists working with oil or rock or metals, particularly in corporate research centers. By the middle of the 1980s, vast numbers of scientists at Exxon's huge research facility, for example, worked on fractal problems. At General Electric, fractals became an organizing principle in the study of polymers and also -- though this work was conducted secretly -- in problems of nuclear reactor safety. In Hollywood, fractals found their most whimsical application in the creation of phenomenally realistic landscapes, earthly and extraterrestial, in special effects for movies."

New Yorker James Gleick, a reporter with ten years on the New York Times, made his book (Viking, 1987, 354 pages, $20) into a bestseller by writing it as a novel: "I have avoided the language of science wherever possible." He realized that every equation in the text would lose him a certain percentage of the readership (the few equations that appear are buried in footnotes and the appendices). He gives each chapter a heading, but the section headings within each chapter have been omitted and appear only in the table of contents.

The cast of characters includes names such as: Archimedes, Aristotle, G. D. Birkhoff, William Blake, Bohr, Bourbaki, Cantor, Cousteau, Darwin, Freeman Dyson, Einstein, Euclid, Fermi, Feynman, Franklin, Galileo, Halley, Hawkin, Heisenberg, Julia, Kolmogorov, Laplace, Leontieff, Magellan, and Newton on through van Gogh.

Gleick realized that a science book without equations would be like a calculus text with no equations, so he includes a list of 96 scientists who helped him with his research and more than 40 pages of page-by-page references to specific sources, as well as a recommended list for further reading.

If you want more specifics, I have a copy of "Nonlinear Dynamics and Chaos" by Thompson and Stewart (Wiley, 1986, $43) filled with nonlinear differential equations and 200 diagrams drawn from computer solutions, as well as articles and reviews in my back issues of the AMS Bulletin, the American Mathematical Monthly, and SIAM Review. However, Gleick's book should be enough to hold you until you get back.

Have a good vacation!!

## EXECUTIVE MEETING MINUTES
## J.A.C.G. SECRETARY

R. P. Mulhearn - JACG

The meeting was called to order by the President at 8:00PM with Doug van Hook, Sam Cory, Dave Noyes, Bob Mulhearn, Linda Peckham, Gary Gorsky and Jack Rutt present and constituting a quorum.

The first item discussed was the resignation of the 8 bit VP Steve Godun. This was followed by Jack Rutt outlining his requirements to ensure a proper and accurate accounting of the funds the club handles. The major item discussed was the club's attendance at the APRIL Aspen computer show.

It was decided to attend the April show and to reserve two tables with electricity; to be wall location if possible. It was further decided to put to the general membership at the February and March meetings the question of what to demo at the show. Plans will be tentative as of the March meeting, to be finalized by the April meeting. Extra badges will be picked up with the cost being shared. We will have a list of the best five 8 and 16 bit PD software in our library. We will pick up an ATARI wall banner to go along with our club banner, to draw attention to our tables. Finally we will get a sales tax collection number from the State.

After a short break we discussed the programming contest entries. As a means to increase membership, the secretary will send to all former members a letter to induce rejoining the J.A.C.G. . The final item discussed was an upgrade to the club's 520ST for an expansion of the BBS; it was decided to research first for the most versatile upgrade at the lowest price before proceding. The meeting was adjourned at 10:30PM. The next meeting is scheduled at Doug Van Hooks' house on April 1st.

# FROM THE DESKTOP

by Linda Peckham

## Will The March Winds Blow in P3?

The release of Publishing Partner Professional, originally slated for release in midFebruary, will now be released in mid-March, according to Soft-Logik. Supposedly, they are still adding features, such as a 60,000 word dictionary. The program is apparently around 200,000 bytes long. Apparently, a user with a non-upgraded 520ST will be able to use the program, though without any accessories, or a dictionary loaded. Another piece of information that has come out of the GEnie message area, is that version 1.x files will not be directly compatible with 2.0 files. However, the 2.0 disk will include a conversion utility.

## Partner Fonts #2 -- Do you Really Need Them?

A second disk of fonts from Softlogik was for sale in Gemini, the last time I stopped by. Being a person who likes lots of fonts available (who doesn't), I bought the disk. Looking at the three fonts more carefully, however, I realized that these fonts are very similar to those already available.

Below are samples of the three fonts: Elegance, Roman Bookface and West Side.

ELEGANCE -- abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345
67890!@#$%^&*()-=_+[]{}üéßL••⅄èôÉäöüÿâÖÜê
ëç¢ßîûà

ROMAN BOOKFACE -- abcdefghijklmnopqr
stuvwxyz ABCDEFGHIKLMNOPQRSTUVWX
YZ1234567890!@#$%^&*()-=_+[]{}üéßL••⅄
èô¢äïöüÿâÖÜêëç£ßîûà

**WESTSIDE -- abcdefghijklmnopqrst**
**uvwxyz ABCDEFGHIKLMNOPQRSTUV**
**WXYZ1234567890!@#$%^&*()-=_+[]{}üé**
ßL èôfäïöüÿâÖÜëëç$ßîûà[

If you flip through back issues of this column, or if you have Publishing Partner and most of the available fonts, you will notice the similarities. Elegance is very similar to DEVOLL from Partner Fonts Disk #1: the main difference is that ELEGANCE is a "filled" font, that is to say, it consists of an outline of various thickness. DEVOLL lacks this, being only a "line" font, and so is less useful than ELEGANCE for large font sizes.

WEST SIDE is virtually identical to the public domain font from SoftLogik, HUDSON. The main difference seems to be in the weight of the type for a given size. Also, it has all the foreign characters , which are not available in HUDSON.

Finally, Roman Bookface is in the class of fonts with Times, Schoolbook, Columbia and Palatino, being a somewhat thinner font than the others.

I am not trying to suggest that this disk is not worth purchasing. After, the availability of fonts is an important requirement for desktop publishing, and the fonts are nice additions. But, if you already have the other fonts mentioned (DEVOLL, HUDSON, et. al.), then you may want to consider if your thirty dollars is worth the variations on a theme.

## Post deScriptions

If you are new to Desktop Publishing, one of the terms you will eventually hear is "Postscript" -- usually in reference to the laser printers. A "Postscript" laser printer starts at $3000 discount; a non-Postscript laser printer (with enough memory to do the job), may put you back about $1500. What is the difference, and what does Postscript do?

Postscript is a "page-description language." It is a programming language, just like BASIC or FORTH, but with one big difference -- it is a specialty language, designed to take an ASCII input file, and write a bit-mapped image of a page for a laser printer. Postscript can be found on $3000-$5000 desktop laser printers, such as Apple Laserwriter. It can also be found on the big, 1000+ dots per inch Typesetting machines, such as the Linotype. A Postscript file can be sent to a desktop laser printer for "proofing" at a resolution of 300 dots per inch (dpi), and then the same file can be sent to a 1240 dpi Linotype for the final version. And, currently, virtually no desktop publishing package that is taken seriously lacks the ability to output Postscript data. (As a case in point -- PERSONAL PUBLISHING has reviewed Publishing Partner, but has not, to my knowledge, mentioned Fleet Street Publisher, or EasyDraw, PP's current competitors. And only PP has a Postscript driver.)

The fact that Postscript is a computer language explains why Postscript laser printers are more expensive than ordinary laser printers -- the printer needs a rather sophisticated, dedicated computer just to interpret and convert the incoming data! A typical Postscript printer contains a 68000 processor,

# FROM THE DESKTOP....

1 Megabyte of ROM, and 2 Megabytes of RAM! And that processor is generally running at 12 Megahertz, as opposed to 8 megahertz for the ST. (And the latest Laserwriters are using 68020s). Besides all this, the printer manufacturer must pay a heft royalty to ADOBE for the use of the Postscript interpreter.

Why use Postscript -- or other Page Description Languages? The reasons have to do with portability, and file size. A user setting up a Postscript file doesn't have to know the resolution of the printer, be it 300 dpi or 2400 dpi. And a Postscript file will be smaller than a file that has a bit-mapped image of the page (we're talking one megabyte for an 8.5 by 11 page at 300 dpi). A computer and a Postscript laser printer may not always print out faster than a computer and a Hewlett Packard LaserJet -- after all, the Postscript printer has to interpret that incoming data and convert it. But try sending a 300 dpi bit-mapped file to a laser engine that prints in 1200dpi -- or try sending a 1 Megabyte file over a phone line.

What does a Postscript file look like? Below is a sample -- the code needed to produce the right-hand format in the Newsletter this month.

```
% Sample file for Postscript
%  (% = comment)
% This next line tells the printer I
%  want to use the AVANTGARDE font in
%  boldface, at a size of 9 points
/AvantGarde-Demi findfont 9 scalefont
setfont
%
%  Top Horizontal Lines
%
1 setlinewidth      % this sets the width
                    % of the "pen" to 1
                    % point, or 1/72 inch.
36 763 moveto       % Moves the "pen" to
                    % x=1/2",y=10.3". Note
                    % that Postscript uses
                    % Rvrse Polish Notat'n.
288 763 lineto      % Draw a line from the
                    % 1st pnt, to the 2nd
stroke              % The line is finished.
324 763 moveto      % The 2nd top line.
576 747 lineto stroke % You can put more
                    % than one cmd/per line
%
%  Bottom Horizontal Line
%
98 35 moveto
570 35 lineto stroke
%
%  Vertical Line
%
306 42 moveto       % starting at the
                    %bottom
306 747 lineto      % drawing to the top
0.5 setlinewidth    % change the width of
                    % my "pen"
stroke              % and finished
%
%  Bottom Text
%
32 32 moveto        % this is where I want
                    % my text to start
(MARCH 1988) show   % anything inside () is
                    % text which goes on a
                    % page.  You can posi-
                    % tion every single
                    % character exactly, if
                    % desired. "Show"
                    % commands the actual
                    % placement of the
                    % text.
574 32 moveto       %  now for the page
                    % number.
(3) show
%
%          ATARI FUJI SYMBOL
%
%  The VAX/VMS system, which I did the
% pages on, wouldn't accept a line longer
% than 255 characters, so I was unable to
% use a bit-mapped image for the symbol.
% (I started with a Postscript file
% output by Publishing Partner, and then
% modified it.)
%
2 setlinewidth      % a wider "pen"
%
%       the center line
%
306 772 moveto
306 754 lineto stroke
%
% the left side
%
302 772 moveto
302 763 lineto
301 761 lineto
299 759 lineto
296 757 lineto
290 754 lineto stroke
%
% and finally, the right side
%
310 772 moveto
310 763 lineto
311 761 lineto
313 749 lineto
316 757 lineto
322 754 lineto stroke
%
%  End of Atari Fuji Symbol
%
showpage            % And "showpage" tells
                    % the Interpreter
                    % "that's all," go
                    % print this page.
```

# PDG-16

BY Linda Peckham

## YOU ASKED FOR IT -- YOU GOT IT!

### *DISK OF THE MONTH #84 -- MUSIC PLAYERS*

With music increasingly popular on the ST. and with several hundred music files available either through Compuserve and GEnie, or the library, there have been a number of requests for a Public Domain player. Therefore, in response to these requests, the March Disk of the Month includes players for two of the most populat formats -- Music Studio by Activision, and the Music Construction Set by Electronic Arts. The disk is organized into two Folders, as follows:

***MU_STUDIO*** -- This folder includes several players, plus a program to dump the Midi data to the screen. The ALITE versions songs to be mixed with DEGAS pictures. One version supports monochrome. Song files are also included: these have been selected on the basis of how well they sound through the monitor speaker.

***MCS*** -- This folder includes the player and a selection of songs in the Music Construction Set format.

## OTHER NEW DISKS

**#81** ***GAMES DISK #8*** -- Includes three games; HOT SHOT (checkers), LUNAR LANDER, and a Stock Market simulation.

**#82** ***BOWLING MANAGER*** -- If you are a secretary or manager for a bowling league, this disk should give you all you need to keep track of league statistics.

**#83** ***BOWLING STATISTICS*** -- This disk will allow you too keep track of how your bowling team is doing.

**#85** ***SPECTRUM DISK #2*** -- This disk consists of images obtained with Computer Eyes and Digispec -- many have not been touched up. SPSLIDE8.PRG is included for viewing. Requires a color monitor.

**#86** ***PROGRAMMERS' CONTEST*** -- This disk contains the ST-based programs submitted for the programmers' contest.

## S.P.A.C.E.

The following disks were obtained from the S.P.A.C.E. library:

**#48** ***PD FORTH [SPACE003]*** -- This disk is an updated version of the Forth previously available in the JACG library.

**#87** ***LANGUAGE DISK [SPACE008]*** -- This disk contains TINY BASIC, XLISP, and an Assembler.

**#88** ***BASIC SAMPLER #2 [SPACE014]*** -- This disk contains a number of BASIC programs. The BASIC language is required.

**#89** ***GAMES DISK #9 [SPACE024]*** -- This disk contains and Adventure-writing compiler and interpreter, a sample Adventure game (Columbus), Flight Simulator scenario files, and the Cadenza versions of Checkers.

**#90** ***GAMES DISK #10 [SPACE026]*** -- This disk contains an EAMON Adventure, Quest for the Holy Grail, Football, and ST_Agression.

**#91** ***C SAMPLER #2 [SPACE027]*** -- This disk contains a number of C programs. (C compiler required.)

**#92** ***UTILITY DISK #5 [SPACE040]*** -- Turtle Hard disk utilities, ramdisk [startup] file copier, spell checker, labeller, more.

**#93** ***COOKBOOK & KERMIT [SPACE041]*** -- This disk contains a cookbook program, a KERMIT program (telecomm), and several other programs.

**#94** ***GAMES DISK #11 [SPACE042]*** -- Dragon, LARN, Laser, Pong and Pool.

**#95** ***ICON [SPACE043]*** -- ICON is a list-processing language.

**#96** ***TELECOMM DISK #1 [SPACE054]*** -- This disk contains two folders containing programs and instructions for hooking two STs together over the RS-232 or MIDI ports. Also: Flash downloader, ramdisk copier, memory testers and sorter.

**#97** ***ACCESSORY DISK #2 [SPACE057]*** -- Calculators, formatter, WORD400, WTERM, more. ALSO: SUPERBOOT.

**#98** ***UTILITY DISK #6 [SPACE058]*** -- FirstWord utilities, compare [files], more. Some programs require BASIC.

**#99** ***UTILITY DISK #7 [SPACE059]*** -- Disk catalog program, formatter, STARTGEM, terminal program, MONOSHOW, HDSCAN, more.

## SUBMISSIONS

Submissions to the library should be made on single-sided disks when possible. 10-sector formats are acceptable, but extended track formats should be avoided. We prefer programs which will run on 512K systems, color or mono. Documentation is preferred, and any requirements should be clearly noted. ***COPY-RIGHTED SOFTWARE WHICH IS EITHER NOT SHAREWARE, OR NOT OWNED BY THE SUBMITTER, WILL NOT BE ACCEPTED!!***

## MAIL ORDER

The disks may be ordered from the mail librarian. Include the number and title of the disks you want, and send $5.00 per disk.

## PDG-16 ...

# ST DISK LIBRARY LIST
## *TELECOMMUNICATIONS*

#80 UNITERM 2.0. *NOTE: Disk now contains 2.0 docs.*

### *APPLICATIONS*

#60* PUBLISHING PARTNER DISK #4.
#57 STWRITER. STWriter 1.75, 2.00 (GEM), docs, ARC.TTP
#53 PUBLISHING PARTNER DISK #3.
#51 FINANCIAL AIDES.
#49 PM-TO-TS.
#39 PUBLISHING PARTNER DISK #2.
#38 PUBLISHING PARTNER DISK #1. Printer Drivers.
#19 MICRO EMACS. EMACS text editor.

### *MUSIC*

#73D DIGITIZED MUSIC 4: Hot Chocolate
#56 SONG DISK #2. 42 Music Studio Songs
#55 SONG DISK #1. 42 Music Studio Songs
#50 MIDI MUSIC. CZVOICE, MIDI sequencer, Midisoft demo, 75 Music Studio Songs (ARC required)
#42D DIGITEZED MUSIC 3: OXYGENE
#41D DIGITIZED MUSIC 2: MATTMOOD
#40D DIGITIZED MUSIC 1: FOREIGN AFFAIR

### *GRAPHICS*

#76 BEST OF GERMANY #2. (.TNY)
#75 BEST OF GERMANY #1. (.TNY)
#74D SILVER SPHERE. (MONO)
#72 ASTERIX
#71 SPACE STATION. (CAD 3D 2.0, COLOR)
#69 STAR WARS MONO. (CAD 3D 2.0, MONO)
#68 STAR WARS COLOR. (CAD3D 2.0, COLOR)
#63 STAR TREK. (CAD3D 2.0, COLOR)
#62 JUGGLER. The ST version of AMIGA's Juggler.
#60* CLIP-ART DISK #3.
#59 CLIP-ART DISK #2.
#52 CLIP-ART DISK #1.
#44 AEGIS ANIMATOR DEMO. (ARC'ed)
#43D ANIMATION DISK
#34 TINY DISK #5.
#33 TINY DISK #4.
#32 TINY DISK #3.
#31 TINY DISK #2. 17 TINY pictures, nudes
#30 TINY DISK #1.
#28 SHINY BUBBLES. Animation from Xanth.
#24 PENTAGON. CAD-3D (1.0)
#7 GRAPHICS DEMOS. (1985 PROGRAMS)

### *UTILITIES*

#70 UTILITY DISK #4.
#66 UTILITY DISK #3. DCOPY19.1, disk formatter, disk/file compressor.
#47 UTILITY DISK #2. ARC.TTP, ARC shells, address book, disk fixer, file hider, undeleter, sector editor, diretory lister, more.
#27 UTILITY DISK #1. Accessory loader and 5 accessories (screen printer, disk manager, calculator, fortune cookie, tinytools), file comparer, disk drive tests, file compressor, hard disk boot program.

### *GAMES*

#79 EAMON. Adventure game, including two scenario files.
#78 GAME DISK #7. Quiz, ST Invaders, Tunnel
#77 GAME DISK #6. Wheel of Fortune 2.0, Wheel of Fortune Editor, Labyrinth
#46 GAME DISK #5. Megaroids, Wheel of Fortune, Blackjack, Daleks, Azarian, slotmachine
#45 PUZZLE PUZZLE. A great shareware monochrome game.
#37 GAME DISK #4. MONOPOLY, Haunted House
#36 GAME DISK #3. Checkers (acc & prg), maze of caves adv. game, Reversi.BAS, Flight Simulator situation file
#35 GAME DISK #2. Colossal Cave Adventure, Daleks, Missile Command, Nightcrawlers, Ogre, solitaire poker, Startrek.bas
#29 GAME DISK #1. Blackjack, clewso, Eliza, Joust (beta test), maze generator, mono pool game, Yahtzee, more.

### *LANGUAGES*

#58 MARK JOHNSON'S C. A public domain C language.
#48 PD FORTH. A public domain FORTH. #9 LOGO SAMPLER. Simple LOGO programs
#8 C SAMPLER. Simple C programs, includes source and run-time files.

### *EMULATORS*

#54 XFORMER. The 8-bit Emulator.
#26 CP/M. The Emulator for CP/M (arc'ed, includes arc.ttp)

### *COMMERICAL DEMOS*

#67 ATHENA II. Demo version of a CAD program.
#61 EASY-DRAW. Demo version of a drawing program.
#50* MIDISOFT. MIDI Sequencer Demo (arc'ed)
#17 ZOOMRACKS I. A database using a card-rack analog. By QUICKVIEW.
#5 4X FORTH. Demo version of the FORTH language, by the DRAGON GROUP.

{ Disk numbers not listed above have either been removed from the library, or are in process of being reorganized and updated. * indicates that the disk is listed twice. D indicates that the disk is double-sided, and that one megabyte of memory is probably required. }

**which are the best?**

**Next month, the JACG is taking two tables at the Ken Gordon show at Aspen Manor. We'll be selling memberships and library disks -- but which ones are apt to sell? Which disks or programs are *your* favorites? Which disks will make good demos? Charlie and I can't do it all -- give us your opinion! Drop us a call, or leave a message on the BBS -- but do it soon -- *APRIL 10* is coming up fast!**

# WHY I LOVE MY HP-28 CHARLIE

by Donald Forbes-JACG

Why would someone in his right mind plunk down $175 at 47th St. Photo for a handheld calculator?

Crazy? Not if it is the new Hewlett-Packard HP-28C calculator.

Now, for the first time, you can do SYMBOLIC calculus and algebra on a FORTH-style computer, and display the answers on an LCD (liquid crystal display) which gives you either four rows of 23 character spaces, or 32 rows of 137 pixels for graphics displays.

Calculus: You can differentiate and itegrate algebraic expressions. You can find the derivative and integral of polynomials. You can find the derivative of expressions with arithmetic, trigonometric, logarithmic, exponential and hyperbolic functions.

For general expressions, the integrate command will give you a Taylor series approximation in the form of a polynomial which you can then integrate.

Algebra: For symbolic algebra, there is a built-in editor. FORM is an interactive expression editor that lets you rearrange an algebraic expression or equation according to the standard rules. The inputs and outputs are all identities: the resulting expression will have the same value as the original argument expression.

Here is an example:

Enter

'A + B'

Square the expression

'(A + B) ^ 2'

Expand this expression

'A^2 + 2*A*B + B^2'

Find the first derivative with respect to A

'2*A + 2*B'

Interested in the mathematics of finance? An interactive root-finding routine will solve quadratic equations. Define the time value of money in a variable TVM and you can then solve for any one of five variables (n, i, pmt, pv, or fv) given the other four.

Want to do statistics?

Here are the changes from 1975 through 1979 in the consumer price index (CPI) and the producer price index (PPI) and the unemployment rate (UR):

| | | | |
|---|---|---|---|
| 1975 | 9.1 | 9.2 | 8.5 |
| 1976 | 5.8 | 4.6 | 7.7 |
| 1977 | 6.5 | 6.1 | 7.0 |
| 1978 | 7.6 | 7.8 | 6.0 |
| 1979 | 11.5 | 19.3 | 5.8 |

Push one button each to get, with 12-digit precision, the means, standard deviations and variances:

| | | |
|---|---|---|
| 8.10 | 9.40 | 7.00 |
| 2.27 | 5.80 | 1.14 |
| 5.17 | 33.64 | 1.30 |

You can find the correlation of CPI and PPI (0.96) or the sample covariance (12.65) or the linear regression slope (2.45) and intercept (-10.43). If you have a random variable and want the chi-square, Snedecor's F, upper normal, or Student's t distribution, they are all available.

Want the four eigenvalues and four eigenvectors of this matrix?

| | | | |
|---|---|---|---|
| 6 | 4 | 4 | 1 |
| 4 | 6 | 1 | 4 |
| 4 | 1 | 6 | 4 |
| 1 | 4 | 4 | 6 |

It takes a minute. The eigenvalues are -15, -1, 5 and 5. One eigenvector is (.5 .5 .5 .5) and another is (-.5 .5 .5 -.5)

If you have played with the FORTH language and operating system for years, as I have, you will love this machine. Everything is handled on the stack, using reverse Polish notation. Unfortunately, no one can remember or spell or pronounce the name of the Polish logician (1878-1956) Jan Lukasiweicz, pronounced Wookashye'veech.

You can use algebraic notation as well as RPN, but then you must flag the entry as a list.

The stack can be as deep as you want, and the last three (or four) entries are always displayed. (The annoying X-, Y-, Z-, T- and LAST X- registers on my HP-15C scientific calculator have now been superseded).

The FORTH architecture gives you the ability to manipulate the stack with a series of FORTH-like commands (dup, dup2, drop, pick, roll, rot, depth).

There is also a Lotus-style series of menus built into the calculator with six options on display at all times. There are many menus for algebra, arrays, binary conversion, program branching and control, complex arithmetic, list, print, stack operations, strings, and unit conversions.

If you pick the complex number menu, you can select real-to-complex conversion, complex-to-real, real part, imaginary part, complex conjugate or the sign.

What impressed me most was the beautiful sparse and elegant architecture of the machine. In the words of the manual:

"PRINCIPLE OF OPERATION: Calculator operation centers around the evaluation of objects on the stack. An object can be data, a name, or a procedure. To evaluate an object means to perform the action associated with that object. Data objects do nothing special (they are just data), name objects refer to other objects, and procedure objects process the objects and commands in their definitions.

"One benefit of this principle is UNIFORMITY. For operations such as entering, editing, copying, storing and recalling, you treat all objects alike. This uniformity means fewer rules for you to remember.

"Another benefit is FLEXIBILITY. You can use objects in any number of combinations to create the tools you need to solve a particular problem. Because you can choose when, if ever, to evaluate a symbolic object, you can work on the problem both symbolically and numerically."

Data objects are these: real number, complex number, binary integer, string, vector, matrix, and list. Name objects are arbitrary objects that are stored together with a name (a variable is an object with a name attached to it). Procedure objects are (1) a program object that can contain any sequence of objects or commands, and (2) algebraic objects which are mathematical expressions or equations.

Delimiters in pairs (', ", #, [, {, (, or <<) identify each type of data object.

For years mathematicians have wondered whether mathematics, which is now founded on set theory (with its paradoxes and multiplicity of versions) and the concomitant notion of inclusion, could be reestablished on the newer notion of category theory and the concomitant notion of composition of functions. The architecture of this calculator may hasten the redrafting of the foundations of mathematics.

If the eight-ounce HP-28C has yet to shake the foundations of mathematics, it has already begun to shake the mathematical establishment. As one teacher said: "What would I ask on tests now?" And another remarked: "Anyway, the teachers won't allow it on tests, or will they?"

The week after I bought the calculator, the mailman brought the November 1987 issue of the American Mathematical Monthly (the journal devoted to college mathematics), with an article by Yves Nievergelt, MBA professor at Washington U in Seattle, on "The Chip with the College Education: the HP-28C."

Today his students do their work on a CYBER, a large mainframe CDC CYBER 180/855 running the International Mathematical and Statistical IMSL library.

His article begins: "Five years ago in this MONTHLY, our present editor augured a future in which students would have pocket calculators that could do symbolic calculus. Exactly five years later, The Wall Street Journal announced the calculator: the HP-28C.

"This hand-held machine deserves some attention -- if it could walk into a standard lower-division mathematics course, it might well pass on its own. The HP-28C and its successors will probably influence individual mathematics curricula in different ways, as does the use of different textbooks now.

"Possibly, the HP-28C might enable students instantly to punch, read, and speak calculus. The HP-28C may also allow users to leave the calculations to the machine, and to focus on ideas and stategies. For thinkers, including non-mathematicians, the availability of supercalculators may increase the practical importance of theory."

Nievergelt puts the machine through its paces.

Find the partial derivative with respect to x of X*LN(X*Y) and the answer comes back as LN(X*Y)+X*(Y/(X*Y)) which you can then reorganize with the algebraic editor as LN(X*Y)+1.

Find the third degree Taylor polynomial for the square root of (1+X). The answer is

1+.5*X-.125*X^+.0625*X^3.

Integrate A*X^2+B*X+C to get

C*X+B/2*X^2+A*2/2/3*X^3.

Fit a least squares line to (5,16),(1,15),(7,19),(9,23),(2,14),(12,21).

Graph EXP(SIN(X)). The calculator talks to a printer (a costly extra) by infrared beam and he has six displays of this and other functions, including statistical scatter plots.

Nievergelt ends with:

"CONCLUSIONS: The HP-28C introduces one new element into the teaching of mathematics, namely awesome computing power at both a modest price and size, with admirable user-friendlinesss (all three characteristics compared to those of a CYBER, for instance.) Students may thus purchase, carry, and utilize a power close to that of a main-frame as easily as they do textbooks.

"Still, in spite of the availability of this hand-held power, proficiency in certain basic skills remains essential to the student's ability to APPLY mathematics. Indeed, it appears that a new trend toward the use of the HP-28C and its successors would require that students understand the underlying concepts even better than before in order to decide what computations to perform, to interpret the results with lucidity, or even first to recognize that no calculator can address the issue at hand. In practice, the need for a deeper understanding of theory grows dramatically."

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Take a moment and look at your mailing label on a recent issue of the JACG Newsletter. Check the upper right hand corner. This is the month/year when your membership expires. Try to renew at least one month early. This helps us keep our bookkeeping in order and avoids your missing any issues of the Newsletter.

There are two easy ways to renew:

1. Fill out a membership renewal form in the front lobby before our monthly meeting and present it with $25 (in cash or check) to the Treasurer. Add $6 for first class mailing of the Newsletter.

2. Copy the information on your mailing label and send, with your remittance to the address listed above.

***CHECK YOUR LABEL TODAY! ! !***

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